

What is claimed is:

1. Packet forwarding equipment for connecting  
multicast client nodes and a multicast network  
including at least one multicast source server,  
5 comprising:

means for translating first request of joining  
to or leaving from a multicast group which is sent  
from one of said multicast client nodes that cannot  
designate a multicast source, into second request of  
10 joining to or leaving from the multicast group with  
designating a source of the multicast group; and

means for transferring the second request to said  
multicast network.

15 2. The packet forwarding equipment according to  
claim 1, wherein an address of the source of the  
multicast group is determined on the basis of an  
address of said multicast client node and an address  
of the multicast group to which said joining or leaving  
20 request has been sent from said multicast client node.

3. The packet forwarding equipment according to  
claim 2, further comprising:

a table comprised of a plurality of entries each  
25 indicating relations of a multicast group address,

a multicast client node address, and a multicast source address corresponding to the multicast group address and the multicast client node address,

wherein when a request of joining or leaving a  
5 multicast group is issued from a multicast client node which does not have a function of designating a multicast source address, said table is searched for an entry including the address of the multicast client node which has issued said join or leave request and  
10 the address of the multicast group to which said join or leave request has to be sent, thereby to designate a multicast source with a multicast source address indicated by the retrieved entry.

15 4. The packet forwarding equipment according to claim 3, wherein when the multicast source address of the entry retrieved from said table is "don't care", said request is processed as a request to join or leave an any-source multicast group which does not designate  
20 a multicast source.

5. The packet forwarding equipment according to claim 3, wherein said table is provided either in the packet forwarding equipment or in a different  
25 apparatus which can be accessed by the packet

forwarding equipment via a communication line.

6. Packet forwarding equipment to which multicast client nodes and a multicast network are connected,

5 comprising:

means for detecting whether a multicast client node, which is joining a source-specific multicast group specifying a multicast source, exists even in the case where the multicast client node does not have  
10 a function of responding to a source-specific multicast join query; and

means for generating a request of leaving from a source-specific multicast group to said multicast network when it is detected that there is no multicast  
15 client node joining the source-specific multicast group.

7. Packet forwarding equipment connected to a multicast network and a local network for  
20 accommodating at least one client node comprising:

a table indicating a relation among a multicast group address, a multicast client node address, and a multicast source address; and

a controller for searching said table, when a  
25 multicast group join query is received from said

multicast network, to determine whether the received query is valid to said local network.

8. The packet forwarding equipment according to claim 7, wherein said controller checks whether an entry including a multicast group address and a multicast client node address matching a multicast address indicated by said received query and a destination line address of the query is included in said table or not and, when the entry does not exist in said table, the controller treats the multicast group indicated by the received query as a multicast group whose operation is rejected by a network administrator.

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9. The packet forwarding equipment according to claim 8, wherein when an entry matching the multicast address indicated by said received query and the destination line address of the query exists in said table, said controller checks whether the multicast source address of the entry includes the multicast source address indicated by the received query or not and, when the multicast source address is not included, the controller treats the multicast group as a multicast group whose operation is rejected by a

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network administrator.

10. The packet forwarding equipment according to claim 9, wherein when the multicast source address  
5 of said entry includes the multicast source address indicated by said received query, said controller sent an inquiry of joining an any-source type multicast to a multicast client node in said local network addressed by said received query.

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11. The packet forwarding equipment according to claim 7, wherein said table is provided either in the packet forwarding equipment or in a different apparatus which can be accessed by the packet  
15 forwarding equipment via a communication line.

12. Packet forwarding equipment connecting a multicast client node and a multicast network, comprising:

20 a management table for managing relations among a multicast group, an address of a node as a client of the multicast group, and an address indicative of a source of a multicast packet in the multicast group; and

25 means for referring to the management table, when

a request of joining to a multicast group is received from the multicast client node, according to the received request to determine the type of the multicast client node.

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13. The packet forwarding equipment according to claim 12, comprising:

a line accommodating module for receiving a multicast join request from said multicast client  
10 node;

a multicast group management packet translating module for determining whether the multicast join request received by said line accommodating module is a request to join a source-specific multicast group  
15 or a request to join an any-source multicast group and, when the received join request is the request to join the any-source multicast group, searching said management table, and translating said received join request into a join request to a source-specific  
20 multicast group on the basis of a result of the search;

a multicast group management packet processing module for processing the request to join said source-specific multicast group; and

a multicast routing managing module for sending  
25 a notification of the request to join the multicast

group, toward the source of the multicast packet in said source-specific multicast group.